

AMENDMENTS TO THE CLAIMS

29. (currently amended) A magnetic random access memory cell, said memory cell comprising:

a first magnetic layer over a conductive layer, said first magnetic layer comprising a first plurality of magnetic multilayer films;

a nonmagnetic tunnel barrier layer over said first magnetic layer; and

a second magnetic layer over said nonmagnetic tunnel barrier layer, said second magnetic layer comprising a second plurality of magnetic multilayer films, an upper layer of which includes a chemical mechanical polishing stop layer.

30. (previously presented) The memory cell of claim 29, wherein said first magnetic layer is a pinned layer.

31. (previously presented) The memory cell of claim 30, wherein said pinned layer comprises a plurality of layers to produce a ferromagnetic pinned layer.

32. (previously presented) The memory cell of claim 29, wherein said second magnetic layer is a sense layer.

33. (previously presented) The memory cell of claim 32, wherein said sense layer comprises a plurality of layers to produce a ferromagnetic sense layer.

34. (previously presented) The memory cell of claim 29, wherein said nonmagnetic tunnel barrier layer comprises aluminum oxide.

35. (previously presented) The memory cell of claim 34, wherein said aluminum oxide has a thickness of about 5 to 25 Angstroms.

36. (previously presented) The memory cell of claim 29, wherein said nonmagnetic tunnel barrier layer comprises a material selected from the group consisting of copper, titanium oxide, magnesium oxide, silicon oxide and aluminum nitride.

37. (previously presented) The memory cell of claim 29, wherein said conductive layer is selected from the group consisting of copper, aluminum, tungsten and gold.

38. (previously presented) The memory cell of claim 29, wherein said first plurality of magnetic multilayer films comprises a first tantalum layer, a first nickel-iron layer, a manganese-iron layer, and a second nickel-iron layer.

39. (previously presented) The memory cell of claim 29, wherein said second plurality of magnetic multilayer films comprises a third nickel-iron layer, a tungsten nitrogen layer and a second tantalum layer.

40. (previously presented) The memory cell of claim 29, wherein said memory cell is coupled to at least one word line.

41. (currently amended) A memory circuit, said memory circuit comprising:

a plurality of memory cells, each memory cell comprising:

a first magnetic layer over a conductive layer, said first magnetic layer comprising a first plurality of magnetic multilayer films;

a nonmagnetic tunnel barrier layer over said first magnetic layer; and

a second magnetic layer over said nonmagnetic tunnel barrier layer, said second magnetic layer comprising a second plurality of magnetic multilayer films, an upper layer of which includes a chemical mechanical polishing stop layer.

42. (currently amended) A processor system comprising at least one [[a]] memory circuit, wherein said at least one [[a]] memory circuit comprises at least one memory cell according to claim 29.

43. (new) The memory cell of claim 29, wherein said chemical mechanical polishing stop layer comprises at least one of tungsten nitrogen, tantalum nitrogen, tungsten silicon nitrogen, and amorphous carbon.

44. (new) The memory cell of claim 29, wherein said chemical mechanical polishing stop layer is an oxide.

45. (new) A magnetic random access memory cell, said memory cell comprising:

a first magnetic layer adjacent a conductive layer, said first magnetic layer comprising a first plurality of magnetic multilayer films;

a nonmagnetic tunnel barrier layer separated from said conductive layer by said first magnetic layer; and

a second magnetic layer separated from said first magnetic layer by said nonmagnetic tunnel barrier layer, said second magnetic layer comprising a second plurality of magnetic multilayer films, an outer layer of which is a chemical mechanical polishing stop layer.

46. (new) The memory cell of claim 45, wherein said chemical mechanical polishing stop layer comprises at least one of tungsten nitrogen, tantalum nitrogen, tungsten silicon nitrogen, and amorphous carbon.

47. (new) The memory cell of claim 45, wherein said chemical mechanical polishing stop layer is an oxide.

48. (new) The memory cell of claim 45, wherein said chemical mechanical polishing layer is a nitride.